

tion to bring certain questions of metaphysics within the scope of scientific inquiry. That any one should have rejected the current method of metaphysics in favour of a geometrical investigation into the nature of God and existence, cannot be otherwise than significant to persons who seek to determine the psychological problem of the nature of consciousness by physiological means. Hence it is that there are some students who think that, if any philosophy were possible, it were that of Spinoza, and others who say that in the work of Mr. Spencer and Prof. Clifford they find the inheritance which Spinoza left behind him.

Mr. Hale White has done his difficult work well. The translation is executed with great care, and the style of the original has been reproduced with some success. That English readers of Spinoza have entertained very loose notions of his real teaching has been due in no small measure to the very inaccurate translation which has hitherto passed current. The present volume should do much to improve the popular conception of Spinoza's system.

At the risk of repetition of what has already been insisted on in these columns, it is right to contrast the position of the naturalists who accept Spinoza's application of scientific methods to metaphysical questions, with the procedure of Kant and those who are currently described as Neo-Kantians. It is the more desirable to revert to this topic because, although there is much complaint that the Neo-Kantians do little (if anything) more than repeat Kant's criticism of the naturalist (or, as he would have described it, dogmatic) doctrine, there is but little evidence that this criticism has been considered, much less met. People go on reasoning upon the old lines about the relation of mind to body and of God to the world as if Kant (to borrow a phrase from another branch of learning) had never obtained a rule calling upon them to show cause why there should not be a new trial of all such questions. It cannot be sufficiently borne in mind that at the present time there are only two courses open in this reference to conscientious thinkers. Either they must abstain altogether from the discussion of an increasing number of problems which are suggested by scientific inquiry, or they must be at the pains, however irksome, to master the nature of the sceptical doubts which Kant brought to bear upon the possibility of these problems. And it may be added that to single them out for elimination is not so easy a task as might be supposed. Probably the real reason why the study of Spinoza's ethics is attended with so much difficulty is that the extraordinary instinct which guides men of the highest genius in inquiries in new and unknown regions raised doubts in his mind which the investigations of Kant subsequently exhibited as the consequences of a more profoundly sceptical point of view. That difficulties arise when men reflect upon the nature of God was for Spinoza, as for Kant, due to the impossibility of reasoning on such matters as if they were ordinary facts of experience. In Spinozism the geometrical method culminated in the abrupt cessation of thought of this kind, just as in Hume empiricism ended in the paralysis of speculation. Had Spinoza pressed his distinction between different kinds of knowledge further, his system must have become in a greater or less degree sceptical in its tendencies—sceptical

in the sense in which Kant was sceptical as a preliminary to reconstruction, or in which, to take the case of a very recent scientific writer, the late Prof. Clifford was a sceptic when he completed his analysis of experience with his theory of ejects. The difference between the three cases is that Kant clearly saw the origin and nature of the difficulties raised by himself, and made the inquiry the preliminary to a radically different discussion of the issues raised in philosophy and science alike. It were well if the fact were less left out of account that the rule obtained by Kant for a new trial of these issues has never yet been discharged.

R. B. HALDANE

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

The Krakatoa Eruption

THE Council of the Royal Society has appointed a Committee for the purpose of collecting the various accounts of the volcanic eruption at Krakatoa, and attendant phenomena in such form as shall best provide for their preservation and promote their usefulness.

The Committee invite the communication of authenticated facts respecting the fall of pumice and of dust, the position and extent of floating pumice, the date of exceptional quantities of pumice reaching various shores, observation of unusual disturbances of barometric pressure and of sea-level, the presence of sulphurous vapours, the distances at which the explosions were heard, and exceptional effects of light and colour in the atmosphere.

The Committee will be glad to receive also copies of published papers, articles, and letters bearing upon the subject.

Correspondents are requested to be very particular in giving the date, exact time (stating whether Greenwich or local), and position whence all recorded facts were observed. The greatest practicable precision in all these respects is essential.

All communications are to be addressed to

G. J. SYMONS,
Chairman Krakatoa Committee
Royal Society, Burlington House, W., February 12

The Remarkable Sunsets

THE following facts in reference to the unusual sunsets, as witnessed in the United States, will I hope be of sufficient value to your readers to justify an insertion in the pages of NATURE.

The place from which I write is 1063 feet above sea-level, 40° 48' 47" N. lat. and 81° 53' 37" W. long. from Greenwich. The main features of the exhibition here have been the crimson glow—the first and after-glow, with other accompanying colours, closely corresponding with those in England and Europe. Hence I need not occupy your pages with a special description.

I have on record seven cases, nearly all the weather would permit one to see. These occurred on November 27, December 9, 10, 25, and 28, and on January 13 and 17.

The first and second glow have extended in two or three instances, though faintly, to the zenith, and the first has occasionally been reflected on the eastern sky. On December 28, the most brilliant exhibition in the series, an arch was formed in the east, the colours red and yellowish green, very soft, and much blended. The crimson glow on the sky flooded the western sides of buildings with an unearthly light, and cast faint shadows across the snow. The appearance of the after-glow, when the sun had reached a certain angle in its decline, favours the view that it is a reflection of the first. If this be true, it is not neces-

sary to admit so great an elevation of the reflecting matter above the earth, and thus remove a serious difficulty in explaining the glow by known causes.

In no case here has the sun during the day or at setting appeared green. On December 28 and January 13 Venus has appeared a beautiful green through the complementary crimson. This fact became important only when it was discovered that the green remained after the crimson had disappeared. The light of the planet was struggling through some medium invisible to the eye, but which arrested the other colour.

Another important point. The glow has been seen without the slightest trace of cirrus clouds behind it. Three times faint ribbon-like stripes of cirri appeared in the first glow, but in the second the gorgeous crimson has generally been projected against the clear blue sky.

The writer has seen no notice of observations on the appearance of the sun and sky during the day, and especially the afternoon, before the brilliant sunsets.

The peculiar appearance of the atmosphere in the vicinity of the sun attracted his attention on the day the first remarkable sun glow occurred. The sky was perfectly clear except around the sun, which was embedded in a soft haze that extended out some 6° or 8° on every side. Let a distant boundary could not be assigned to the haze, so gradually did it shade into the blue of the sky. The sun was obscured so that the eye could look at it for a moment and outline its disk. Covering the sun with the hand the haze adjacent glowed like a furnace, the light diminishing rapidly as the eye swept outwards.

Two or three remarks, naturally spring from this appearance. 1. The haze was not an ordinary cirrus cloud. It had no distinct bounding surfaces; it was invisible everywhere except near the sun. 2. There was, of course, no more of the matter forming the haze around the sun than elsewhere. 3. It was capable of reflecting intensely the light that fell upon it at a large incident angle, nearly 90°. 4. The reflection of light in a high degree by any substance at a large incidence would indicate a liquid. But the clearness of the sky showed the absence of condensed vapour. And yet there was something in the air around the sun—and no more there than anywhere else—which was then, some three hours farther east, flinging its gorgeous crimson over earth and sky, and which, three hours later, would drape the earth and sky of the observer in the same beautiful colours. And what was that something? That is doubtless the great question, and I can only echo, What was it? If the answer be "Vapour of water in some peculiar state," then it is wondrous strange that water, subject as it always has been to almost every conceivable change in the air, should rarely if ever before have assumed this peculiar state! Besides, the prevalence of this phenomenon around the globe, manifesting the same characteristics everywhere, requires some marked and probably unusual cause.

As to the volcanic theory, it has some good points. It gives an unusual explanation for an unusual occurrence.

It might be expected that a convulsion which would engulf islands and mountains, and send the throbblings of ocean around the globe, would leave some tokens of its presence on the more sensitive air.

The difficulty of accounting for the suspension of solid particles for months in air of extreme rarity may be avoided by admitting the effects to be due mainly to gases ejected in the eruptions. Most of these being condensable by extreme cold would occupy definite strata and not rise to an extreme height.

The sinking of Krakatoa and the admission of sea water to the awful and fiery gulfs below, would, it seems, set free immense quantities of chlorine from the salt water. As this gas is readily absorbed by pure water it may have condensed around its molecules the vapour of the air, and thus become capable of reflecting the light in a higher degree.

Of course these are suppositions, consistent as far as we know with law; and they may stand among other probabilities till clearer light confirms or rejects them.

In a communication to NATURE, December 13, p. 149, Prof. C. Piazz Smyth advances the idea that one of the conditions of the red sunsets was the *dryness of the lower atmosphere*. The hygrometric condition of the air here on the days the crimson sunsets were seen, is given in the following table, taken from the monthly reports of the writer to the U.S. Signal Office. The two columns give the mean temperature of the dry and wet bulb thermometers (F.) for three observations each day, at 7.32 a.m., 2.32 and 9.32 p.m.

Dates			Dry bulb			Wet bulb
November 27	...	...	29	...	...	26.8
December 5	...	...	40	...	...	38
" 9	...	...	36.6	...	...	32
" 10	...	...	36	...	...	33
" 25	...	...	29.5	...	...	26
" 28	...	...	23.6	...	...	22.2
January 13	...	...	37	...	...	33
" 17	...	...	23.2	...	...	21.2

A mere inspection of the table shows that the dew point was high, and the percentage of possible moisture in the air quite large. Whether this weird and beautiful play of colours around the dying day is due to watery vapour in the air time will show; here it has certainly not been due to any deficiency in the vapour of the lower strata.

O. N. STODDARD

Wooster, State of Ohio, United States, January 18

Unconscious Bias in Walking

THE following little experiment seems to show that if the majority of people are, as Mr. Darwin argues, left-legged, they would circle to the left in a mist, as Mr. Larden says they do. I would call myself normal, my left leg being the stronger. That is to say, like the majority, I jump from the left, rest my weight standing on the left (a glance at a photograph album shows this to be normal) and generally cross my right over my left whilst sitting. Having put myself in a dark empty room, I could not satisfy myself as to which way I circled, there not being space enough, but when I artificially lamed myself by putting a few tin tacks in my slipper, I circled strongly in the direction of the sound foot. From what had been said in NATURE on the subject at the time, I expected the for-the-time-being longer and stronger limb to circle round the other. The fact seems to be that there is a bias towards the stronger, most-leant-upon limb, irrespective of length. It is worth noting that, if the object causing pain be placed under the inside of, say, the right foot only, the experimenter will lean on the outside of that foot and circle to the right.

In the matter of left-leggedness I have requested several right-handed people to feign lameness. Every one of them has limped with the right foot; and, on being asked to do so, has found difficulty in imagining the left lame, and acting as if it were. May it not be because the right leg is somewhat weaker than canes are carried in the right hand?

But although left-leggedness *quâ* strength seems normal, the reverse seems to hold good *quâ* skill: one pushes a door to with the right, feels his way down a dark stair with the right, kicks a football with the right. A friend of mine, a skilful athlete, particularly known as a jumper, at first expressed astonishment that there should be any doubt as to the left leg being the stronger. On reflection he added: "I'm not sure, however; figures in skating are easier on the right." This nine figure-skaters out of ten will assent to. It is to be expected, if my theory is correct. The right leg is more easily controlled, guided, and kept in position—in a word, the more skilful limb; and at the same time the left being the better kicker, the impulse is better given.

It seems to me that mounting a horse from the near side is not a mere fashion (except for the left-handed minority). The stronger leg is put in the stirrup and gives the lift, whilst the more skilful leg is thrown over the animal's back.

It would be interesting to know which foot it is, if any in particular, which Indian servants use for prehensile purposes; also whether the higher quadrumana are right or left hind-handed.

I have noticed that persons walking in the street dwell longer on the one foot than on the other, and I remember once arguing that in-toed persons with a rolling gait were the only people who were not lame. I have been trying to observe this seriously for some days, and believe it to be so, but as the mind naturally invents a beginning and an end for a continuous motion it may be imagination.

W. G. SIMPSON

5, Randolph Cliff, Edinburgh, February 6

The Ear a Barometer

THE phenomenon described by my friend Mr. Boys, on p. 333, is pathological, and not physiological. He is clearly suffering from slight obstruction of the Eustachian tube, a canal which leads from the inner side of the tympanic cavity into the posterior fauces. Its natural relief is, as he very accurately describes, by